B.C. Gold Deposits

The British Columbia Ministry of Energy and Mines' MINFILE database lists nearly 1000 individual lode and 95 placer deposits in the province. Total lode gold (1890-2003) and placer gold (1858-2003) production amounts to 30 million ounces and 5.6 million ounces, respectively. The top 25 past and current producers including the **Bridge River**, **Rossland**, **Hedley**, **Premier**, **Greenwood** and **Cariboo-Barkerville** camps and the **Eskay Creek, Island Copper**, **Snip** and **Kemess South** mines, which have each produced in excess of one million ounces, account for 90% of total production.

Total in-ground gold resources currently stand at 80 million ounces. Resources listed from 264 deposits, categorized as a percentage by deposit type, are: 74% porphyries; 18% veins; 7% massive sulphides and 1% skarns. Twenty-one deposits each contain in excess of 1 million ounces of gold.

Porphyries

The exploration and development of porphyry deposits during the 1960s and 1970s had a profound affect on the mining community in British Columbia. Subsequent exploration for these polymetallic Cu-Mo-Au-Ag deposits has built up an impressive database for BC. Currently, gold resources are 60 million ounces from 13 alkalic and 27 calcalkalic porphyries. Significant examples include: **Prosperity**, **Kemess North**, **Mt. Milligan**, **Galore Creek**, **Schaft Creek**, **Red-Chris**, **Afton**, **Kerr** and **Sulphurets Gold**. New discoveries of intrusion-related gold include **Kena** and **Thorn**.

Massive Sulphides

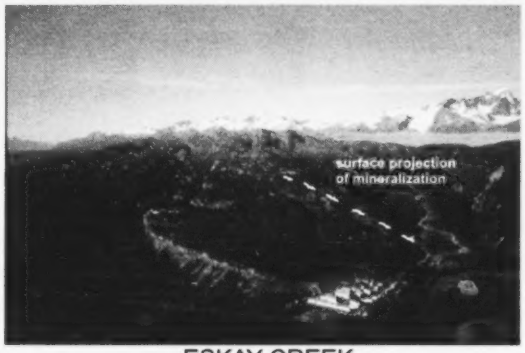
Although much of the gold in VMS deposits is recoverable as a by-product, the major exception is the **Eskay Creek** high-grade, Au-Ag mine. The most significant potential for this type of deposit extends from the Stewart area northwards to the Iskut area (e.g. **Homestake Ridge**, **RDN**).

Veins

Historically, mesothermal and epithermal veins have been the biggest source of gold production in the province. Some 428 mesothermal mines have yielded 13.3 M oz, including 4.16 M and 2.78 M oz from the **Bridge River** and **Rossland** camps respectively, and 19 epithermal vein deposits have yielded 2.9 M oz (incl. >2 M oz from the **Premier** camp). The **Snip** intrusion-related, shear-hosted vein deposit, which yielded 1.07 M oz Au (1991-1999), is an excellent target type for future discoveries. The **Equity Silver** 'transitional' Cu-Ag-Au deposit, which produced over 500 000 ounces of gold as a by-product, is a good target type. Many Tertiary epithermal deposits appear to be associated with extensional tectonism, i.e. Basin and Range-style. The Nechako Plateau region of central BC hosts several such deposits. The **Golden Bear** Carlin-type, heap-leach mine operated as a very successful seasonal operation between 1997 to 2002.

Skarns/Mantos

Over 350 skarns are known in BC; >125 are enriched in precious metals. The largest producer was **Hedley** (Nickel Plate) at 2.5 M oz.



ESKAY CREEK

Owned / operated by Barrick Gold Corp.

A 'world class' subaqueous massive sulphide hot-spring deposit; one of the world's highest valued Au and Ag mines

World's 5th largest Ag producer; accounts for 42% of Canada's Ag production

Produces approximately 670 tonnes per day of which 55% is direct shipping ore (>60 g/t Au equiv.) and 45% goes through a mill flotation circuit (<25 g/t Au equiv.)

2003 production: 10 951 kg (352 070 oz) Au and 527 775 kg (17 M oz) Ag @ total operating cash cost of US $110/oz Au, net of Ag co-product

KEMESS SOUTH

Owned / operated by Northgate Minerals Corp.

A gold-copper porphyry deposit. Mill throughput ~ 50 000 tonnes per day.

2003 Production: 9148 kg (294 117 oz) of Au and 34 554 tonnes (76.1 million lbs) of Cu, @ operating cost ~ US$ 125/oz Au (net of Cu credits)

Mining reserves (Jan 1 '04) are 92 million tonnes @ 0.234% Cu and 0.6 g/t Au

For more Information:

www.em.gov.bc.ca/Mining/Geolsurv (604) 660-2812

Other BC Ministry of Energy and Mines' gold publications:

Open File 2004-1 Lode Gold Production and Resources in BC (map)
Open File 2003-5 Gold Production and Resources in BC (update)
Open File 2000-2 Gold Production and Resources in BC (main report)

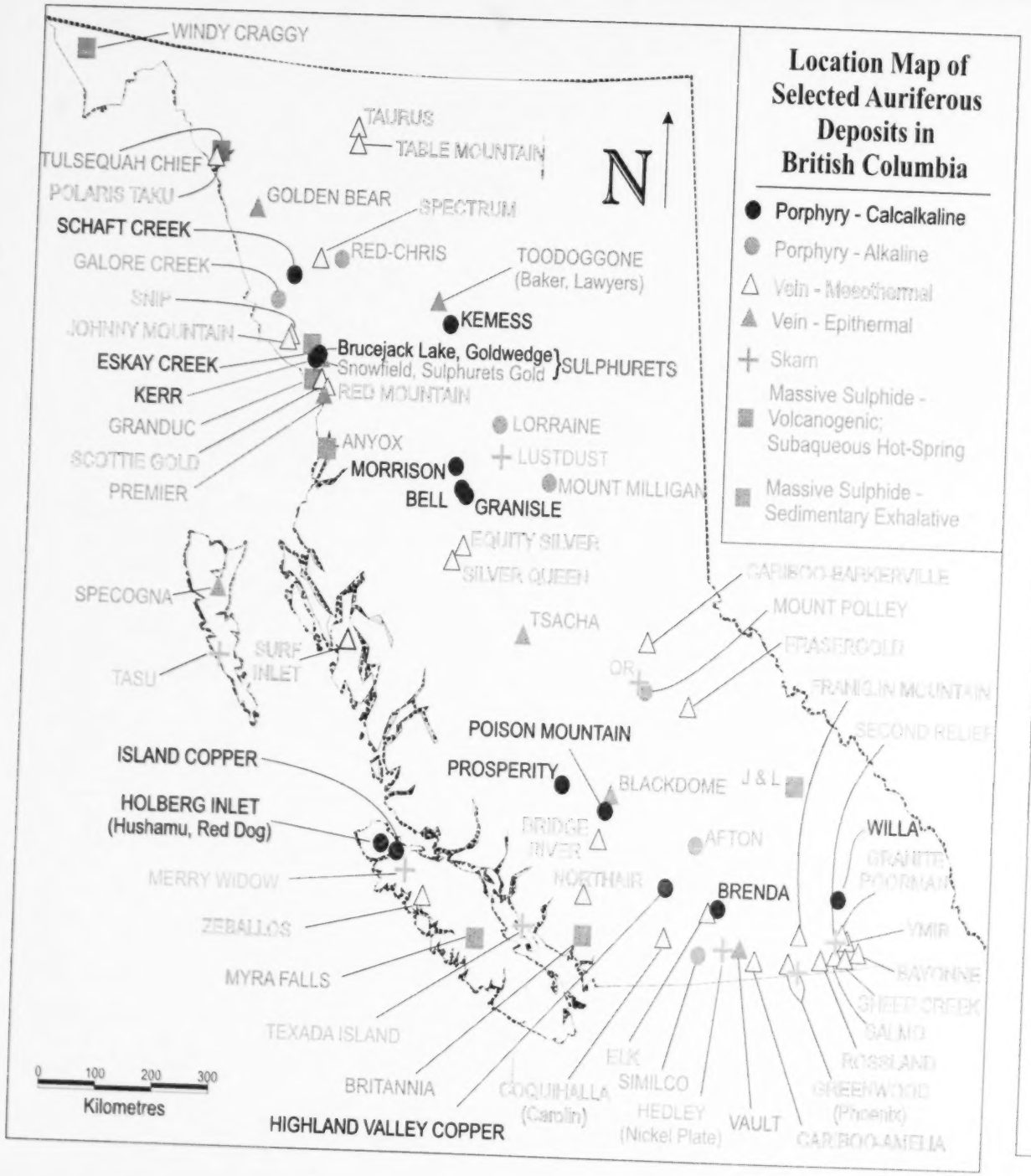
Produced by: T.G. Schroeter and J.W. Pardy, 2004

Gold in British Columbia

Zeballos

Atlin (McKee Ck.)

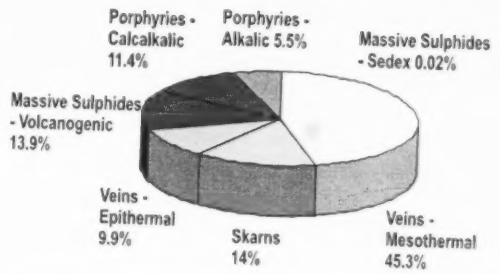
BRITISH COLUMBIA
Ministry of Energy and Mines
Energy and Minerals Division
Geological Survey & Development Branch



Location Map of Selected Auriferous Deposits in British Columbia

- Porphyry - Calcalkaline
- Porphyry - Alkaline
- Vein - Mesothermal
- Vein - Epithermal
- Skarn
- Massive Sulphide - Volcanogenic; Subaqueous Hot-Spring
- Massive Sulphide - Sedimentary Exhalative

B.C. LODE GOLD PRODUCTION (1890-2003): BY DEPOSIT TYPE


Porphyries - Calcalkalic 11.4%
Porphyries - Alkalic 5.5%
Massive Sulphides - Sedex 0.02%
Massive Sulphides - Volcanogenic 13.9%
Veins - Epithermal 9.9%
Skarns 14%
Veins - Mesothermal 45.3%

Total Production: 934,099 kilograms (30,031,975 ounces)

B.C. LODE GOLD PRODUCERS (1890-2003): TOP 25 by RANK

DEPOSIT NAME / CAMP NAME	GOLD PRODUCTION (grams)	SILVER PRODUCTION (grams)	GOLD RESOURCES (grams)	TOTAL GOLD (grams)
BRIDGE RIVER CAMP		29,613,140	13,924,423	143,315,418
ROSSLAND CAMP		110,240,000	15,638,903	102,168,903
ESKAY CREEK		3,883,356,000	31,304,589	114,784,449
HEDLEY CAMP		18,802,842	211,172	76,946,668
PREMIER CAMP		1,337,373,655	6,812,800	71,701,046
KEMESS CAMP		50,626,000	190,059,760	232,273,578
GREENWOOD CAMP		310,232,328	4,885,031	44,862,675
CARIBOO-BARKERVILLE CAMP		4,650,641	16,902,000	55,223,505
ISLAND COPPER		294,105,533	0	35,267,550
SNIP		12,893,090	0	33,316,634
MYRA FALLS CAMP		857,394,751	9,296,400	35,478,264
SHEEP CREEK CAMP		9,102,786	779,037	23,880,726
SIMILCO CAMP		294,238,155	19,963,070	42,804,488
AFTON CAMP		90,462,058	60,271,239	77,392,288
EQUITY SILVER		2,219,480,555		15,801,709
BRITANNIA		180,845,883		15,350,561
BELL		38,319,730	59,200,000	72,085,964
SURF INLET		6,258,235	1,653,450	13,748,818
MOUNT POLLEY		7,905,000	10,753,333	22,283,400
GOLDEN BEAR		2,191,107	0	10,562,757
HIGHLAND VALLEY COPPER CAMP		1,482,809,960	7,569,000	16,751,416
ZEBALLOS CAMP		3,882,835	4,964,152	14,118,401
TABLE MTN. CAMP		2,987,237	876,099	9,970,691
YMIR CAMP		42,968,544	9,003,504	17,301,731
BLACKDOME		26,065,176	1,588,736	9,072,947
		11,316,805,241	465,656,698	1,306,464,827

(Schroeter, 2004)